

HIGHER TECHNICAL INSTITUTE

DIPLOMA PROJECT

**ELECTRICAL ENGINEERING
DEPARTMENT**

**DESIGN OF THE ELECTRICAL SERVICES OF
A LUXURY HOUSE**

ALEXANDROS ALEXANDROU

SUPERVISOR: Mr. John Demetriou

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HIGHER TECHNICAL INSTITUTE	PROJECT NO 3817
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DEDICATED:

**TO ALL THE PEOPLE WHO HELPED
ME TO COMPLETE THE ELECTRICAL
ENGINEERING COURSE IN HIGHER
TECHNICAL INSTITUTE.**

INTRODUCTION

1.1 CHAPTER INFORMATIONS

THIS PROJECT IS DEALING WITH THE ELECTRICAL SERVICES DESIGN OF A LUXURY HOUSE. IN EACH CHAPTER OF THIS PROJECT, A CALCULATION OF AN EXAMPLE IS MADE AND THE REST RESULTS ARE SHOWN WITH TABLES. IN ORDER FOR THE READER TO UNDERSTAND THE CALCULATIONS, THE PROJECT TRAVELS BACK TO THE APPENDICES.

- ❖ CHAPTER 2 DEALS WITH THE ILLUMINATION DESIGN. THE NUMBER OF LUMINARIES NEEDED (INCLUDING THE POWER OF EACH ONE) FOR EACH ROOM OF THE BUILDING.
- ❖ CHAPTER 3 DEALS WITH THE LIGHTING CIRCUITS AND IT IS BASED ON THE CALCULATIONS OF CHAPTER 2 THE SIZES OF THE WIRES AND CONDUITS ARE CALCULATED. AT THE DRAWINGS (FOUND ON THE BACK OF THE PROJECT) WE CAN SEE THE POSITION OF THE LUMINARIES AND THE WAY OF CONNECTION.
- ❖ CHAPTER 4 DEALS WITH THE SOCKET OUTLETS. THE SIZES OF THE WIRES AND CONDUITS ARE CALCULATED. THE POSITION OF EACH SOCKET OUTLET IS SHOWN BY DRAWINGS WHICH CAN BE FOUND ON THE BACK OF THE PROJECT.
- ❖ CHAPTER 5 DEALS WITH THE AIR CONDITIONING. THE SIZE OF THE AIR CONDITION, WIRE AND CONDUITS ARE CALCULATED FOR EACH ROOM. THE POSITION OF EACH STORAGE HEATER IS SHOWN BY DRAWINGS. (DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)
- ❖ CHAPTER 6 DEALS WITH THE FIXED APPLIANCES OF THE BUILDING. THE WIRE AND CONDUIT SIZES OF THE COOKER UNIT, REFRIGERATOR, WASHING MACHINE, DISH WASHER AND WATER HEATER ARE CALCULATED. (DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)

- ❖ CHAPTER 7 DEALS WITH THE FIRE ALARM. THE WAY THAT THE FIRE ALARM WORKS, THE BLOCK DIAGRAM OF THE ALARM INSTALLATION AND THE TYPE OF THE SYSTEM. (DRAWING CAN BE FOUND ON THE BACK OF THE PROJECT)
- ❖ CHAPTER 8 DEALS WITH THE BURGLAR ALARM OF THE BUILDING, THE BLOCK DIAGRAM OF THE ALARM AND THE WAY ITS CONNECTED. (DRAWINGS CAN BE FOUND ON THE BACK OF THE PROJECT)
- ❖ CHAPTER 9 DEALS WITH THE TELECOMMUNICATION SERVICES OF THE BUILDING. THE CONNECTION OF EACH TELEPHONE LINE IN THE TELEPHONE DISTRIBUTION CASE, THE SIZE OF THE TELEPHONE DISTRIBUTION CASE WIRES AND CONDUITS ARE ALL SHOWN. THE POSITION OF EACH TELEPHONE POINT IS SHOWN BY DRAWINGS.
- ❖ CHAPTER 10 DEALS WITH THE TELEVISION INSTALLATION OF THE BUILDING AND HOW IT WORKS. THE CONNECTION IS SHOWN IN THE BLOCK DIAGRAM. (DRAWINGS CAN BE FOUND ON THE BACK OF THE PROJECT)
- ❖ CHAPTER 11 DEALS WITH THE SWIMMING POOL MOTOR AND THE ELECTRIC GATES INSTALLATION
- ❖ CHAPTER 12 DEALS WITH THE DIVERSITY OF THE BUILDING. THE SIZES OF THE MAIN FUSE AND THE DISTRIBUTION BOARDS ARE CALCULATED. ALSO THE SIZE OF THE MAIN CABLE SUPPLY IS CALCULATED. THE POSITIONS OF THE POINTS ARE SHOWN BY DRAWINGS.
- ❖ CHAPTER 13 DEALS WITH THE INSTALLATION COSTING. THE EVALUATION OF THE MATERIAL AND LABOUR COST IS CALCULATED.

CONTENTS

PAGE

ACKNOWLEDGMENTS

SUMMARY

<u>CHAPTER 1: INTRODUCTION</u>	1
1.1 GENERAL INFORMATION FOR THE CALCULATIONS	
<u>CHAPTER 2: ILLUMINATION DESIGN</u>	4
2.1 ...INTRODUCTION	
2.2...DEFINITIONS AND UNITS OF PHYSICAL QUANTITIES	
2.3...ILLUMINATION CALCULATIONS	
2.4...TABLES SHOWING THE LUMINARIES	
<u>CHAPTER 3: LIGHTING CIRCUIT</u>	24
3.1 ...LIGHTING CIRCUITS CALCULATIONS	
3.2...CALCULATIONS FOR LIGHTING CIRCUIT 1L1	
3.3...TABLES SHOWING THE CABLE AND CONDUIT FOR THE LIGHTING CIRCUITS	
<u>CHAPTER 4: SOCKET OUTLETS</u>	27
4.1 ...INTRODUCTION	
.....CALCULATIONS OF A RING CIRCUIT	
.....SINGLE LINE DIAGRAM FOR THE RING CIRCUIT 1R1	
4.2... TABLES SHOWING THE CABLE AND CONDUIT FOR THE SOCKET OUTLETS	
<u>CHAPTER 5: AIR CONDITION</u>	33
5.1 ... INTRODUCTION	
5.2...SIZE SELECTION OF THE UNITS	
.....CALCULATIONS FOR SIZE SELECTION OF THE UNITS	
5.3...TABLES SHOWING THE UNIT SIZES	
5.4...SINGLE LINE DIAGRAM FOR AIR CONDITION UNIT AC 1	
5.5...CALCULATIONS FOR AIR CONDITION UNIT AC 1	
6.3.3...TABLES SHOWING THE CABLES AND CONDUIT SIZES OF THE UNITS	

<u>CHAPTER 6: FIXED APPLIANCES</u>	42
6.1...CALCULATIONS FOR THE COOKER UNIT CKSINGLE LINE DIAGRAM FOR COOKER UNIT CK	
6.2...CALCULATIONS FOR THE WASHING MACHINE UNITSINGLE LINE DIAGRAM FOR WASHING MACHINE UNIT WM	
6.3...CALCULATIONS FOR DISH WASHER UNITSINGLE LINE DIAGRAM FOR DISH WASHER UNIT DW	
6.4...CALCULATIONS FOR WATER HEATER UNITSINGLE LINE DIAGRAM FOR WATER HEATER UNIT WH	
6.5...CALCULATIONS FOR THE REFRIGERATOR UNITSINGLE LINE DIAGRAM FOR REFRIGERATOR UNIT 1 RF 1	
 <u>CHAPTER 7: FIRE ALARM</u>	 62
7.1...INTRODUCTION	
7.2...BLOCK DIAGRAM OF THE ALARM SYSTEM CONNECTION.	
 <u>CHAPTER 8: BURGLAR ALARM</u>	 68
8.1...INTRODUCTION	
8.2...BLOCK DIAGRAM OF THE ALARM SYSTEM CONNECTION.	
 <u>CHAPTER 9: TELECOMMUNICATIONS</u>	 69
9.1...INTRODUCTION	
9.2...CABLE AND D/B CAPACITY	
9.3...CONDUIT SCHEMATIC BLOCK DIAGRAM	
9.4...WIRING SCHEMATIC BLOCK DIAGRAM	
9.5...CONNECTIONS TABLE	
 <u>CHAPTER 10: TELEVISION</u>	 72
10.1...INTRODUCTION	
10.2..._TELEVISION CONNECTION BLOCK DIAGRAM	
 <u>CHAPTER 11:</u>	 74
11.1_SWIMMING POOL	
11.2... MCB SELECTION	
11.3... CABLE SIZE SELECTION	
11.4...ELECTRIC GATES	

CHAPTER 12: DIVERSITY CALCULATIONS.....76
12.1...TABLE OF DIVERSITY FOR DBO 1
12.2...CURRENT BALANCING OF THE LOADS FOR DBO 1
12.3...TABLE OF DIVERSITY FOR DB 1 1
12.4... CURRENT BALANCING OF THE LOADS FOR DB 1 1
12.5...SUPPLY AND CPC CABLE SELECTION
12.6...CONDUIT SIZE SELECTION

CHAPTER 13: COSTING.....83
13.1...INTRODUCTION
13.2...METHODS OF COSTING
13.3...COSTING TABLES
13.4...COSTING EVALUATION

APPENDIX 1 : REGULATIONS AND TABLES

APPENDIX 2 : DISTRIBUTION BOARDS AND MCBS

APPENDIX 3 : SWITCHES

APPENDIX 4 : LIGHTING AUTOMATION

APPENDIX 5 : ALARMS

APPENDIX 6 : AIR CONDITIONS

DRAWINGS

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SUMMARY

The purpose of the electrical installation project of electrical services in a luxury house must be carried out with responsibility in order to provide safety and luxury to the people.

The electrical design of the building is carried out according to IEE wiring regulations 16th edition in coordinate with C.Y.T.A and E.A.C regulations.

The design of the electrical services of the building is explained in detail in this book. The book has been divided into different chapters. The contents of each chapter are given at the front pages. At the end of the book, some appendices are attached and in each one of the appendices are tables and manufacturers data used in the design for each appendix.